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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,011	12/29/2004	Walter Musial	NREL 01-51	6976

7590 02/26/2007  
Paul J White Senior Patent Counsel  
National Renewable Energy Laboratory  
1617 Cole Boulevard  
Golden, CO 80401

EXAMINER
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GUTIERREZ, ANTHONY

ART UNIT	PAPER NUMBER
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2857

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/26/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/520,011

Applicant(s)

MUSIAL ET AL.

Examiner

Anthony Gutierrez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/29/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Danko et al. (U.S. Patent No. 3,664,179).

As to claims 1, 7-12, 15-17, and 21, Danko et al. discloses an apparatus for applying at least one cyclical load to a specimen, the specimen extending at least along a longitudinal axis (see Fig. 1), comprising: a mass (24); an actuator mounted to the specimen and operatively associated with said mass, said actuator moving said mass along a linear displacement path that is substantially perpendicular to the longitudinal axis of the specimen (18) (see also, col. 2, lines 59-71); a transverse load actuator operatively associated with the specimen, said transverse load actuator applying to the specimen a cyclical load in a transverse direction (31) (see also, col. 3, lines 5-14 and lines 35-39), said transverse direction being substantially perpendicular to the longitudinal axis of the specimen and to the linear displacement path (see col. 3, lines 15-25 and Fig. 1 (11) as it relates directionally to 18); and a control system operatively associated with said actuator and said transverse load actuator (31), said control system operating said actuator to reciprocate said mass along the linear displacement path at a reciprocating frequency, said reciprocating frequency being

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about equal to a resonance frequency of the specimen in a test configuration (col. 3, lines 43-57), said control system operating said transverse load actuator to vary the cyclical load at about the reciprocating frequency (col. 3, lines 58-61 and col. 4, lines 25-37).

As to claims 2 and 18, Danko et al. discloses a feedback sensor (30) operatively associated with said control system, said feedback sensor producing a feedback signal, said control system being responsive to the feedback signal produced by said feedback sensor, said control system operating said actuator to change a displacement of said mass in response to said feedback signal (col. 5, lines 15-27)

As to claims 4, 14, and 19, Danko et al. discloses that the feedback signal is related to a acceleration of the specimen (col. 5, lines 15-27, AC component)

As to claims 3, 13, and 20, Danko et al. discloses that the feedback signal is related to a strain in the specimen.(col. 5, lines 15-27, DC component).

As to claims 5 and 6, Danko et al. discloses that said actuator comprises a linear hydraulic actuator (14) having a proximal end and a distal end, the proximal end of said linear hydraulic actuator being mounted to said load frame (F), the distal end of said linear hydraulic actuator being mounted to said mass (24).

### **Conclusion**

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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United States Patent Application Publication No.: US 2005/0011263 A1 to Harris teaches a method and apparatus for assessing characteristics of wood using frequency varying acoustic waves.

United States Patent No.: US 6,732,591 B2 to Miles et al. teaches a device for fatigue testing of materials using an actuator that moves clamping means.

United States Patent No.: US 6,718,833 B2 to Xie et al. teaches a multiaxial high cycle fatigue test.

United States Patent No.: US 6,601,456 B1 to Davidson et al. teaches a fretting fixture for high-cycle fatigue test machines.

United States Patent No.: US 6,205, 863 B1 to Ishii et al. and United States Patent No.: 6,098,465 to Matsumoto et al. teaches material testing machines having a control system for feedback controlling of the servo system.

United States Patent No.: 5,789,666 to Bayer et al., teaches a resonant sensor for determining multiple physical values for a vibrating body.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Gutierrez whose telephone number is (571) 272-2215. The examiner can normally be reached on Monday to Friday.

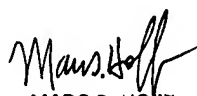
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on (571) 272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anthony Gutierrez  
Examiner  
Art Unit 2857

AG  
2/20/07

  
MARC S. HOFF  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER